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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,573	03/31/2004	John Ellis	CYGL-26,421	1242
25883	7590	01/22/2007		
HOWISON & ARNOTT, L.L.P			EXAMINER	
P.O. BOX 741715			ROSASCO, STEPHEN D	
DALLAS, TX 75374-1715			ART UNIT	PAPER NUMBER
			1756	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/22/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/816,573

Applicant(s)

ELLIS, JOHN

Examiner

Stephen Rosasco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Detailed Action

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsai (7,160,654).

Tsai teaches (see claims and col. 3, lines 5-32; col. 8, line 44+) – In one embodiment, the first reference mark is comprised of chrome on the first mask and the first photoresist is a positive tone photoresist. In an alternative embodiment, the reference mark is a clear region on the mask and a first reference mark and pattern is formed in a negative tone first photoresist layer. The resulting first photoresist pattern is transferred into the substrate with a plasma etch process and the first photoresist layer is removed. A second photoresist layer is then coated on the patterned substrate and is exposed with a second mask having a second reference mark which is an essentially square shape comprised of a first pair of parallel lines and a second pair of parallel lines that are perpendicular to the first pair of parallel lines. The second reference mark is smaller than the first reference mark and is designed to be printed in the second photoresist layer such that the second reference mark is overlaid on the first reference mark and when observed from a top-down view fits inside

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the first reference mark in the first pattern and does not overlap any of the lines in the first pattern.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsai (7,160,654) in view of Hirooka (6,924,090).

The claimed invention is directed to a method for forming a mask, comprising the steps of: creating at least one drawing layer that defines changes to the structures to be formed on the surface of a semiconductor substrate at one step in the processing thereof, which step involves the use of a mask, wherein the at least one drawing layer will define a pattern region that will either result in removal of the material from the semiconductor substrate in the defined pattern region, or removal of matter from the semiconductor substrate around the defined pattern region; creating in the at least one drawing layer an indicator area with an indicator region disposed therein that will result in removal of material from around the indicator region regardless of whether the mask is a dark tone mask or a clear tone mask, the indicator region appearing in the negative if the mask is a dark tone mask; and creating a mask from the at least one drawing layer as either a dark tone mask having a transparent region corresponding to the defined pattern region for exposing the underlying substrate if the defined pattern region is associated with a process

that results in material being removed from around the defined pattern region, or as a clear tone mask having an occluding region corresponding to the defined pattern region if the defined pattern region is associated with a process that results in material being removed from the defined pattern region.

The teachings of Tsai differ from those of the applicant in that the applicant teaches that the indicator region includes identification for identifying the mask apart from other masks.

Hirooka teaches (see claims and Fig. 9A, 9B) a method of recording different identifiers, each including at least one character, on multiple plate-type members, involves the use of a photomask of a first type and at least two photomasks of a second type. The photomask of the first type has an opaque pattern that defines a blank region to write the identifier thereon. Each of the photomasks of the second type has an opaque pattern defining the at least one character. The method further includes the steps of forming a photoresist layer on the surface of one of the plate-type members, exposing the photoresist layer, except the blank region, to a radiation through the photomask of the first type, and forming a latent image of the at least one character in the blank region through at least one of the photomasks of the second type.


It would have been obvious to one having ordinary skill in the art to take the teachings of Tsai and combine them with the teachings of Hirooka in order to make the claimed invention because it would be expected that when dealing with multiple masks to use a known way of identifying the different masks.

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Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'S. Rosasco', with a stylized, sweeping flourish extending from the left side.

S. Rosasco
Primary Examiner
Art Unit 1756

S. Rosasco
01/10/07